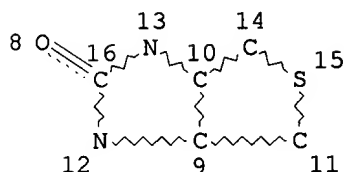


=> d que

L7 17316 SEA FILE=HCAPLUS ABB=ON PLU=ON POLYELECTROLYTES+NT,RTCS/CT
 L11 STR



Considered.
10/29/02

NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L15 5222 SEA FILE=REGISTRY SSS FUL L11
 L20 39 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND L15
 L22 9673 SEA FILE=HCAPLUS ABB=ON PLU=ON BIOSENSORS+NT/CT
 L24 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 AND L20

=> d ibib abs hitstr hitind 124 1-7

L24 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:410413 HCAPLUS

DOCUMENT NUMBER: 135:16333

TITLE: Self-assembled metal colloid monolayers having size
 and density gradients

INVENTOR(S): Natan, Michael J.; Baker, Bonnie E.

PATENT ASSIGNEE(S): The Penn State Research Foundation, USA

SOURCE: U.S., 78 pp., Cont.-in-part of U.S. Ser. No. 769.970,
 abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6242264	B1	20010605	US 2000-254142	20000112
WO 9810289	A1	19980312	WO 1997-US15581	19970904

W: CA, JP, KR, US

RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.:

US 1996-25064P P 19960904

US 1996-769970 B2 19961219

WO 1997-US15581 W 19970904

AB Metal colloid monolayers comprising a plurality of colloidal Ag-clad Au
 nanoparticles surface confined on a substrate are described which have a
 gradient of nanoparticle d. in a first direction, and a gradient in
 particle size in a second direction perpendicular to the first direction.

The gradients may be formed by coating a substrate with a bifunctional org. film; immersing the coated substrate into a colloidal Au soln. so that a first leading edge of the substrate is immersed in the colloidal Au soln. for a longer period of time relative to a first trailing edge to provide a monolayer of Au nanoparticles having a decreasing level of coverage from the first leading edge to the first trailing edge; withdrawing the substrate from the colloidal Au soln.; rotating the substrate through an angle of about 90.degree.; immersing the substrate provided with the monolayer of Au nanoparticles in an Ag+ soln. so that a second leading edge of the substrate is immersed in the Ag+ soln. for a longer period of time relative to a second trailing edge to provide a monolayer of Au nanoparticles having a decreasing level of Ag cladding thickness from the second leading edge to the second trailing edge; and withdrawing the substrate from the Ag+ soln. Methods of detg. optimal surface characteristics of a metal colloid monolayer comprising a plurality of colloidal Ag-clad Au nanoparticles surface confined on a substrate for use in an anal. procedure are described which entail using the gradated monolayer for an anal. procedure; and analyzing the results achieved at different regions of the gradated monolayer to det. a nanoparticle coverage and particle size that provides an optimal result. The monolayer may be a surface-enhanced Raman scattering response substrate or a biosensor for detecting the presence of a biol. ligand.

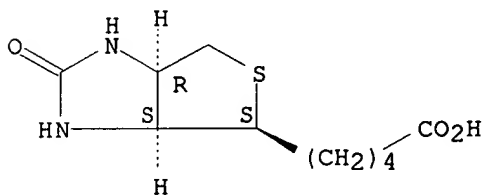
IT 58-85-5, Biotin 102849-12-7, 3-(N-Maleimidopropionyl)biocytin
 RL: ARU (Analytical role, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process); USES (Uses)

(self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)

RN 58-85-5 HCAPLUS

CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

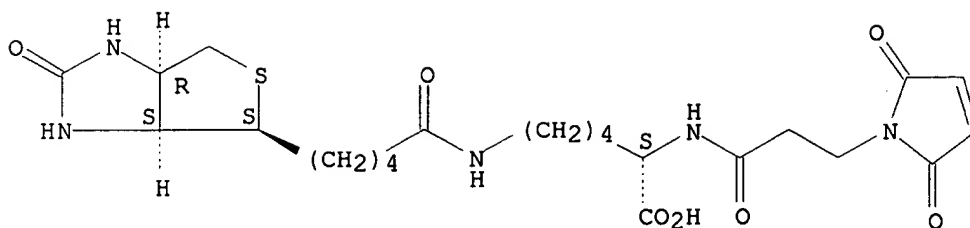
Absolute stereochemistry. Rotation (+).



RN 102849-12-7 HCAPLUS

CN L-Lysine, N2-[3-(2,5-dihydro-2,5-dioxo-1H-pyrrol-1-yl)-1-oxopropyl]-N6-[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

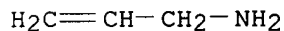


IT **71550-12-4, Poly(allylamine)hydrochloride**
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)
 RN 71550-12-4 HCAPLUS
 CN 2-Propen-1-amine, hydrochloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 10017-11-5

CMF C3 H7 N . Cl H



● HCl

IC ICM G01N021-65
 ICS G01N033-48; G01N033-50; G01N033-553
 NCL 436171000
 CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 66, 73, 79, 80
 IT **Biosensors**
 Colloids
 Monolayers
 Nanoparticles
 SERS (Raman scattering)
 Self-assembly
 (self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)
 IT **58-85-5, Biotin** 9013-20-1, Streptavidin **102849-12-7**,
 3-(N-Maleimidopropionyl)biocytin
 RL: ARU (Analytical role, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process); USES (Uses)
 (self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)
 IT 60-23-1, Mercaptoethylamine 60-24-2, 2-Mercaptoethanol 1067-47-6,
 3-Cyanopropyltriethoxysilane 1344-28-1, Alumina, uses 4420-74-0,
 3-Mercaptopropyltrimethoxysilane 7440-22-4, Silver, uses 7440-57-5,
 Gold, uses 7631-86-9, silica, uses 12142-45-9, Potassium niobate
 (K4Nb6O17) 13822-56-5, 3-Aminopropyltrimethoxysilane 14808-60-7,
 Quartz, uses 18282-10-5, Tin dioxide 18586-39-5, 2-

(Diphenylphosphino)ethyltriethoxysilane 27326-65-4, 2-
 (Trimethoxysilyl)ethyl-2-pyridine 30382-71-9 31001-77-1,
 3-Mercaptopropylmethyldimethoxysilane 71550-12-4,
 Poly(allylamine)hydrochloride 143203-47-8, (3-
 Cyanopropyl)dimethylmethoxysilane

RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PROC (Process); USES (Uses)

(self-assembled silver-clad gold colloid monolayers having size and d.
 gradients and their use in anal.)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:238455 HCAPLUS

DOCUMENT NUMBER: 135:46742

TITLE: Superquenching and Its Applications in J-Aggregated
 Cyanine Polymers

AUTHOR(S): Jones, Robert M.; Bergstedt, Troy S.; Buscher, C.
 Thomas; McBranch, Duncan; Whitten, David

CORPORATE SOURCE: QTL Biosystems LLC, Santa Fe, NM, 87501, USA

SOURCE: Langmuir (2001), 17(9), 2568-2571

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A fluorescence superquenching process was obsd. in water-sol.
 poly-L-lysine derivs. contg. an appended cationic cyanine dye on each
 repeat unit. The formally nonconjugated cyanine dye chromophores strongly
 assoc. in a J aggregate structure characterized by a sharp red-shifted
 absorption (compared to the monomer) and a similarly sharp red-shifted
 fluorescence. Superquenching is manifested by large Stern-Volmer consts.
 for fluorescence quenching by oppositely charged electron acceptors or
 energy transfer dyes; substantial quenching is obsd. at levels of quencher
 corresponding to one to four mols. per polymer chain. The quenching obsd.
 for these polymers is equiv. or greater to that previously obsd. for
 conjugated polyelectrolytes. The superquenching of the J aggregate
 polymer fluorescence can be used applied in sensors for competitive
 bioassays.

IT 344554-42-3

RL: NUU (Other use, unclassified); USES (Uses)

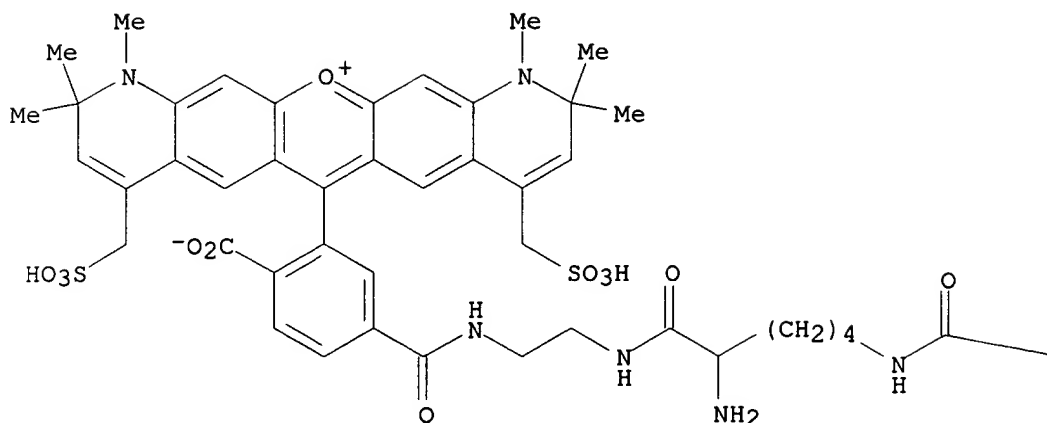
(QTL conjugate quencher; fluorescence superquenching in J-aggregated
 cyanine-functionalized poly-L-lysine for use in selective biosensors)

RN 344554-42-3 HCAPLUS

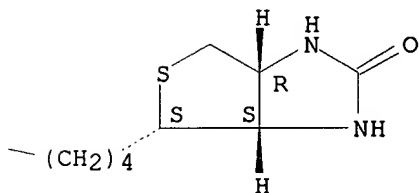
CN Pyrano[3,2-g:5,6-g']diquinolin-13-ium, 6-[5-[[[2-[[2-amino-6-[[5-
 [(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-
 oxopentyl]amino]-1-oxohexyl]amino]ethyl]amino]carbonyl]-2-carboxyphenyl]-
 1,2,10,11-tetrahydro-1,2,2,10,10,11-hexamethyl-4,8-bis(sulfomethyl)-,
 inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



IT 344554-43-4

RL: NUU (Other use, unclassified); USES (Uses)

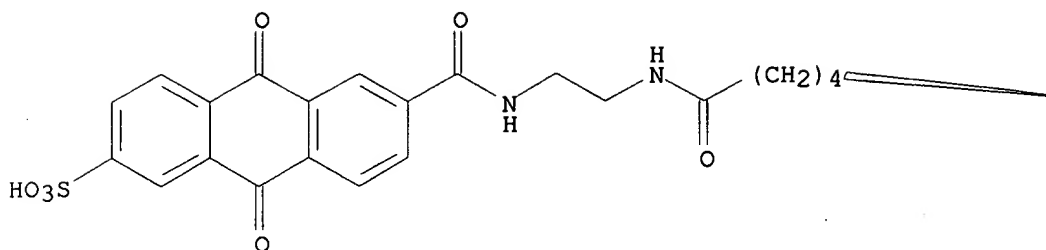
(anthraquinone biotin QTL, quencher; fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)

RN 344554-43-4 HCAPLUS

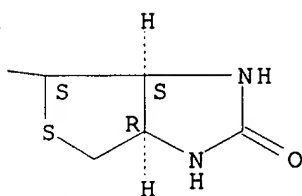
CN 2-Anthracenesulfonic acid, 6-[[[2-[[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]amino]ethyl]amino]carbonyl]-9,10-dihydro-9,10-dioxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 9, 73

IT **Polyelectrolytes**
(cationic; fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)

IT **Biosensors**
Electron acceptors
Fluorescence quenching
J-aggregates
Optical absorption
Photoinduced energy transfer
(fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)

IT **344554-42-3**
RL: NUU (Other use, unclassified); USES (Uses)
(QTL conjugate quencher; fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)

IT **344554-43-4**
RL: NUU (Other use, unclassified); USES (Uses)
(anthraquinone biotin QTL, quencher; fluorescence superquenching in J-aggregated cyanine-functionalized poly-L-lysine for use in selective biosensors)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:790686 HCAPLUS

DOCUMENT NUMBER: 133:331759

TITLE:

Method for detecting biological agents

INVENTOR(S):

Chen, Liao-hai; Mcbranch, Duncan W.; Wang, Hsing-Lin; Whitten, David G.

PATENT ASSIGNEE(S):

The Regents of the University of California, USA

SOURCE:

PCT Int. Appl., 38 pp.

DOCUMENT TYPE: CODEN: PIXXD2
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: 1 English
 PATENT INFORMATION:

cha

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
<u>WO 2000066790</u>	A1	20001109	WO 2000-US12423	20000504
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1097242	A1	20010509	EP 2000-928892	20000504
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRIORITY APPLN. INFO.:

US 1999-132556P P 19990505

WO 2000-US12423 W 20000504

AB A sensor is provided including a polymer capable of having an alterable measurable property from the group of luminescence and elec. cond., the polymer having an intermediate combination of a recognition element, a tethering element and a property-altering element bound thereto and capable of altering the measurable property, the intermediate combination adapted for subsequent sepn. from the polymer upon exposure to an agent having an affinity for binding to the recognition element whereupon the sepn. of the intermediate combination from the polymer results in a detectable change in the alterable measurable property, and, a means of detecting said detectable change in the alterable measurable property.

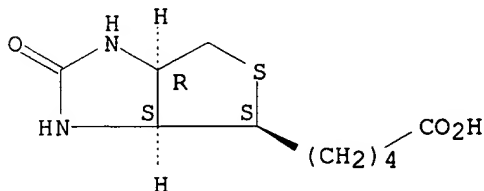
IT 58-85-5, Biotin

RL: DEV (Device component use); USES (Uses)
 (method for detecting biol. agents)

RN 58-85-5 HCAPLUS

CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-,
 (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IC ICM C12Q001-68

ICS C12Q001-70; G01N021-64; G01N033-00; G01N033-53; G01N033-531;
 G01N033-533; G01N033-543; C07H021-02; C07H021-04; C12N015-00;
 B05D001-18; B01J013-00

CC 9-1 (Biochemical Methods)

IT Affinity

Bacteria (Eubacteria)

Biosensors

Cell

Dissolution

Electric conductivity

Energy transfer

Fluorescence

Fluorescent dyes

Fluorometry

Luminescence

Luminescence spectroscopy

Microorganism

Optical fibers

Polyelectrolytes

Sensors

Separation

Solutions

Test kits

Virus

(method for detecting biol. agents)

IT 58-85-5, Biotin 71-00-1D, Histidine, copper complex 1910-42-5,
Methyl viologen 7440-50-8D, Copper, histidine complex, uses 9033-83-4,
Polyphenylene 9055-67-8D, Poly(ADP-ribose) polymerase, DNA-binding
domain 25067-54-3, Polyfuran 25067-54-3D, Polyfuran, derivs.
25067-58-7, Polyacetylene 25067-59-8, Polyvinyl carbazole 25067-59-8D,
Polyvinyl carbazole, derivs. 25233-30-1, Polyaniline 25233-30-1D,
Polyaniline, derivs. 25233-34-5, Polythiophene 26009-24-5,
Poly(p-phenylene vinylene) 30604-81-0, Polypyrrole 30604-81-0D,
Polypyrrole, derivs. 37758-47-7, Ganglioside GM1 78675-98-6, Squaraine
96638-49-2, Poly(phenylene vinylene) 96638-49-2D, Poly(phenylene
vinylene), derivs. 103419-76-7, Poly(1,4-naphthalenediyl-1,2-ethenediyl)
125714-86-5 164658-06-4, Poly(2,5-pyridinediyl-1,2-ethenediyl)
189145-97-9, Poly(pyridinediyl-1,2-ethenediyl)

RL: DEV (Device component use); USES (Uses)

(method for detecting biol. agents)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:171579 HCAPLUS

DOCUMENT NUMBER: 130:349166

TITLE: A new self-assembled modified electrode for
competitive immunoassay

AUTHOR(S): Danilowicz, C.; Manrique, J. M.

CORPORATE SOURCE: Departamento de Quimica Analitica y Fisicoquimica,
Facultad de Farmacia y Bioquimica, Buenos Aires,
AR-1113, Argent.

SOURCE: Electrochemistry Communications (1999), 1(1), 22-25
CODEN: ECCMF9; ISSN: 1388-2481

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

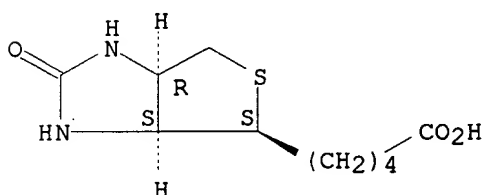
LANGUAGE: English

AB Alternating films constructed upon successive deposition of redox polymer
Os(bpy)₂ClPyCH₂NHpoly(allylamine) and antibiotin IgG were developed for
amperometric immunosensor design. Cyclic voltammetric measurements were
used to verify charge transport between redox sites and the redox surface
concn. was estd. upon voltammetric peak integration. Biotin-antibiotin

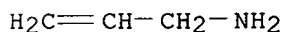
complex formation was evaluated using horseradish peroxidase as an enzyme label. Redox mediation between the modified electrode surface and the redox site in the enzyme was verified after substrate addn. Multilayer modified gold electrodes with biol. active antibiotin IgG mols. were employed for the development of a competitive immunoassay with electrochem. label detection.

IT **58-85-5**, Biotin
 RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
 (a new self-assembled modified electrode for competitive immunoassay)
 RN 58-85-5 HCAPLUS
 CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-,
 (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **71550-12-4D**, reaction products with osmiumbipyridinechloropyridinaldehyde
 RL: DEV (Device component use); USES (Uses)
 (a new self-assembled modified electrode for competitive immunoassay)
 RN 71550-12-4 HCAPLUS
 CN 2-Propen-1-amine, hydrochloride, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 10017-11-5
 CMF C3 H7 N . Cl H



● HCl

CC 9-1 (Biochemical Methods)
 IT **Biosensors**
 (immunosensors; a new self-assembled modified electrode for competitive immunoassay)
 IT **58-85-5**, Biotin
 RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
 (a new self-assembled modified electrode for competitive immunoassay)
 IT 7440-57-5, Gold, uses **71550-12-4D**, reaction products with osmiumbipyridinechloropyridinaldehyde
 RL: DEV (Device component use); USES (Uses)
 (a new self-assembled modified electrode for competitive immunoassay)
 REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:176094 HCAPLUS

DOCUMENT NUMBER: 128:190151

TITLE: Self-assembled metal colloid monolayers

INVENTOR(S): Natan, Michael J.; Baker, Bonnie E.

PATENT ASSIGNEE(S): Penn State Research Foundation, USA; Natan, Michael J.; Baker, Bonnie E.

SOURCE: PCT Int. Appl., 141 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9810289	A1	19980312	WO 1997-US15581	19970904
W: CA, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6242264	B1	20010605	US 2000-254142	20000112
PRIORITY APPLN. INFO.:				
			US 1996-25064P	P 19960904
			US 1996-769970	A 19961219
			WO 1997-US15581	W 19970904

AB A biosensor based on complexes between biomol. receptors and colloidal Au nanoparticles, and more specifically, colloid layers of receptor/Au complexes that can be used to detect biomol. analytes through measuring of binding-induced changes in elec. resistance or surface plasmon resonance. Also disclosed is a method for detecting and analyzing carrier-borne chem. compds. with Raman spectroscopy using an improved SERS substrate. Further disclosed is an improved method for detecting compds. in solvents using capillary electrophoresis in conjunction with Raman spectroscopy.

IT 58-85-5, Biotin 71550-12-4,

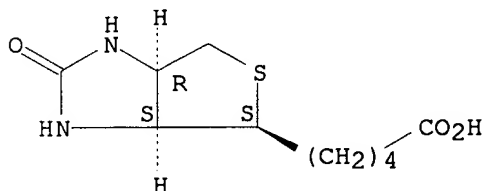
Poly(allylamine)hydrochloride

RL: DEV (Device component use); USES (Uses)
(self-assembled metal colloid monolayers)

RN 58-85-5 HCAPLUS

CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-,
(3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



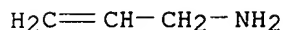
RN 71550-12-4 HCAPLUS

CN 2-Propen-1-amine, hydrochloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 10017-11-5

CMF C3 H7 N . Cl H



● HCl

IC ICM G01N033-553
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 59, 79, 80
IT Air
Biochemical molecules
 Biosensors
 Capillary electrophoresis
 Colloids
 Electric resistance
 Monolayers
 Nanoparticles
 Pesticides
 Raman spectroscopy
 SERS (Raman scattering)
 Self-assembly
 Solvents
 Surface plasmon
 (self-assembled metal colloid monolayers)
IT **58-85-5**, Biotin 1332-29-2, Tin oxide 1344-28-1, Alumina, uses
7440-22-4, Silver, uses 7440-57-5, Gold, uses 9013-20-1, Streptavidin
14808-60-7, Quartz, uses **71550-12-4**,
Poly(allylamine)hydrochloride
RL: DEV (Device component use); USES (Uses)
 (self-assembled metal colloid monolayers)

L24 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:181195 HCAPLUS
DOCUMENT NUMBER: 126:168793
TITLE: Optical solid-phase biosensor based on streptavidin and biotin
INVENTOR(S): Diederich, Anke; Loesche, Matthias; Voelker, Michael;
Siegmond, Hans-Ulrich; Heiliger, Ludger
PATENT ASSIGNEE(S): Bayer A.-G., Germany
SOURCE: Ger. Offen., 12 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19530078	A1	19970220	DE 1995-19530078	19950816
EP 762122	A1	19970312	EP 1996-112608	19960805
R: BE, DE, FR, GB, IT, LU, NL, SE				
CA 2183204	AA	19970217	CA 1996-2183204	19960813
JP 09054094	A2	19970225	JP 1996-229454	19960813

PRIORITY APPLN. INFO.:

DE 1995-19530078

19950816

AB A novel optical solid-phase biosensor, which can be in the form of test strips and which uses biomols. as receptors for the specific detection of analytes as well as Foerster energy transfer between a donor fluorescent dye F1 and an acceptor fluorescent dye F2 as the detection means, is disclosed. The device consists of: (1) a transparent support; (2) an overlaying multilayer of polyanions and polycations that contains as its ~~topmost layer a biotinylated polycation, e.g., polylysine hydrobromide;~~ (3) a covering for the topmost biotinylated cationic layer that contains streptavidin which can bind to the biotinylated layer; and (4) addnl. biotinylated biomols. as receptors, e.g., antibodies, that can bind to a fluorescent dye F2-labeled analyte, and wherein the fluorescent dye F1 can be bound to the polyionic layers, to the streptavidin, or to other antibody-binding biomols., or to the antibodies. An example is given of the detn. of IgG using a test strip according to the invention.

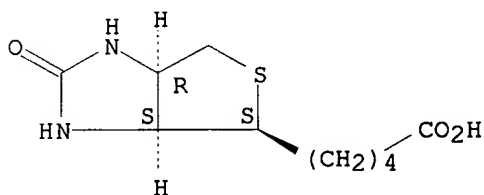
IT 58-85-5, Biotin

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

RN 58-85-5 HCAPLUS

CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-,
(3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IC ICM G01N033-533

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 15, 73

IT **Polyelectrolytes**

(anionic; optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

IT **Polyelectrolytes**

(cationic; optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

IT **Biosensors**

(immunosenors; optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

IT **Biosensors****Biosensors**

(optical; optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

IT 58-85-5, Biotin 9013-20-1, Streptavidin 27072-45-3, FITC

36877-69-7, Rhodamine B isothiocyanate

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(optical solid-phase biosensor based on streptavidin/biotin with Foerster energy transfer for detection)

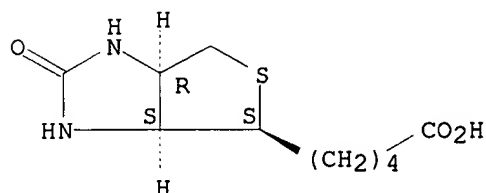
L24 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:328889 HCAPLUS
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 TITLE: New nanocomposite films for biosensors: layer-by-layer adsorbed films of polyelectrolytes, proteins or DNA
 AUTHOR(S): Decher, Gero; Lehr, Birgit; Lowack, Klaus; Lvov, Yuri; Schmitt, Johannes
 CORPORATE SOURCE: Inst. fur Physikalische Chemie, Johannes Gutenberg-Universitat, Mainz, D-55099, Germany
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AB This report describes the construction of ultrathin multicomponent films with an internal structure on the nanometre scale. In the simplest case, the films are built-up by the subsequent adsorption of polyanions and polycations. They can be fabricated on inorg. substrates such as glass, quartz or silicon wafers, or on various org. materials. The polymeric interlayers can incorporate materials with desired elec. optical properties. The av. thickness of the layers can be fine-tuned with Angstrom precision by the addn. of suitable salts. They are temp. stable up to at least 200.degree.C and can be laterally structured using conventional photolithog. techniques. The films provide for a well-defined substrate-independent interface for the immobilization of biol. macromols., such as proteins or DNA, in their active state. The immobilization of streptavidin enables the controlled attachment of any biotinylated mol. with no resulting loss in its biol. activity. Area-selective immobilization provides the possibility of built-in quality control for the fabrication of biosensors with sepd. ref. and sample areas on the same substrate.

IT 58-85-5, Biotin
 RL: ANT (Analyte); ANST (Analytical study)
 (new nanocomposite films for biosensors: layer-by-layer adsorbed films of polyelectrolytes, proteins or DNA)
 RN 58-85-5 HCAPLUS
 CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



CC 9-1 (Biochemical Methods)
 IT **Biosensors**
 Immobilization, biochemical
Polyelectrolytes
 (new nanocomposite films for biosensors: layer-by-layer adsorbed films of polyelectrolytes, proteins or DNA)
 IT 58-85-5, Biotin
 RL: ANT (Analyte); ANST (Analytical study)

(new nanocomposite films for biosensors: layer-by-layer adsorbed films of polyelectrolytes, proteins or DNA)